

partners specifically named in the proposal, that have been approved as part of the award, shall be submitted in writing to the cognizant NSF Program Official for approval prior to any changes taking effect. Request for prior approval of changes to the PI(s) must be submitted through FastLane or Research.gov or review by the cognizant NSF Program Official and approval by an NSF Grants Officer.

Award Specific Programmatic Terms and Conditions:

2. Program/Project Description.

The Focused Research Hubs in Theoretical Physics (FRHTP) are designed to enhance significant break throughs at an intellectual frontier of physics by providing resources beyond those available to individual investigators, so as to promote a collaborative approach to a focused topic while promoting the preparation of scientists at the beginning of their independent scientific careers.

Specifically, the FRHTP is asked to achieve five distinct goals: (1) advance theoretical physics in scientific areas relevant to the theory hub; (2) enhance the development of early-career scientists in theoretical physics; (3) support creative, substantive activities aimed at enhancing education, diversity, and public outreach; (4) demonstrate broader impacts, e.g., impacts on other field(s) and benefits to society; (5) demonstrate a synergy or value-added rationale that justifies a group approach.

The FRHTP will strive to lead in forefront research in theoretical physics and be an incubator for theoretical physics by emphasizing the development, mentoring, and career enhancement of a diverse group of post-doctoral theorists (Hub Fellows) working in a vibrant research environment with considerable intellectual freedom, access to an extensive community of potential theoretical and experimental research partners, and with a high degree of national and international exposure.

3. Project Governance.

The Awardee will ensure that an efficient and effective project governing structure is in place throughout the award period to support all critical or significant project activities.

The governance of the FRHTP consists of one Director(PI), who makes daily operating decisions and two decision-making bodies, the Executive Board (Co-PIs) and the Advisory Committee. The Director is responsible for the overall management of the programs and represents the leading university in communication with each of the decision-making bodies within FRHTP. The Executive Board oversees the mentoring of the Hub Fellows. The Executive Board will meet (virtually) bi-weekly to receive a report from the FRHTP Director, and discuss programmatic and administrative issues. The Advisory Committee provides advice and strategic recommendations. The Advisory Committee will provide an external perspective to ensure that the FRHTP research and training is of the highest caliber, as seen from a national and international perspective. Any change in the overall management structure must be approved by the cognizant NSF program officer in advance of the proposed change.

4. Governing Responsibilities.

The Awardee will ensure efficient and effective performance of all project responsibilities by the governing components throughout the award period. These responsibilities include:

As established by the Awardee, the programmatic activity at the FRHTP concerns Postdoc Selection, Training and Mentoring activities. Project decisions affecting the Hub Fellows and science will be made jointly by the FRHTP Director, the four members of the Executive Board and FRHTP senior personnel.

The Director will serve as the point-of-contact for the cognizant NSF Program Officer, including providing notification of any critical project management issues, such as changes in key personnel, cost, schedule, and funding profile prior to implementation of such changes. The Director is responsible for notifying NSF of any changes in the management structure.

The Director makes daily operating decisions for the FRHTP. Input from other participants in the FRHTP will be solicited as needed. The latter include the members of the Executive Board, Senior Participating Investigators and Affiliated Scientists.

The Executive Board is responsible for advising and mentoring the Hub Fellows. The Executive Board will meet (virtually) bi-weekly to receive a report from the FRHTP Director and discuss programmatic and administrative issues.

The Advisory Committee is responsible for providing advice and strategic recommendations to the Director and the Executive Board. The Advisory Committee will meet annually on the day preceding or following the annual FRHTP meeting, to review Hub science; recruitment and mentoring, outreach, diversity, and other professional development activities; participation in and initiation of workshops, programs, and schools; and quality of interactions with the broader physics community in the scientific areas relevant to the theory hub.

5. Reporting Requirements.

The Awardee will provide ad hoc and regular reports as designated by the NSF cognizant Program Official with content, format, and

submission timeline established by the NSF cognizant Program Official. The Awardee will submit all required reports via Research.gov using the appropriate reporting category; for any type of report not specifically mentioned in Research.gov, the Awardee will use the “Interim Reporting” function to submit reports.

The Awardee will supply annual and final reports as described in the Award and Administration Guide II.D1.

The Awardee was asked to submit a diversity plan for the FRHTP. In the annual and final reports under the section, “What is the impact on the development of human resources?” in Research.gov, the Awardee will discuss progress relative to that diversity plan. If needed, modifications of the diversity plan may be required.

6. Ongoing Project Oversight.

The Awardee will ensure full commitment and cooperation among the governing structure components, and all project staff during all ongoing NSF project management and oversight activities. The Awardee will ensure availability of all key institutional partners during any desk or on-site review as well as timely access to all project documentation.

The NSF will conduct site visit reviews of the operations of FRHTP in order to confirm that the organization continues to fulfill the goal of projects supported through the Physics Division and the requirements for the theory hub as outlined in the program solicitation NSF 20-605. Typically, site visits are being conducted in the second and fourth year of the project. If that a site visit review reveals that the organization is not fulfilling the goals of the program, the NSF may choose to phase out the funding for FRHTP.

7. Program-specific terms and conditions, if applicable.

Changes in the management structure must be communicated to the cognizant NSF program officer in advance, as noted in section 3.

Change History

Prior Awarded Funding Amount:

Per Original Award on
07/30/2021: \$699,998

National Science Foundation
 2415 Eisenhower Avenue
 Alexandria, VA 22314
www.nsf.gov

COOPERATIVE AGREEMENT (CA)

AWARD: PHY-2116679 **EFFECTIVE DATE:** August 1, 2021

EXPIRATION DATE: July 31, 2026

PROJECTED TOTAL AWARD FUNDING:

(Subject to availability of funds)
 \$3,499,997

CUMULATIVE AMOUNT:

\$2,799,997

SOLICITATION:

(Incorporated by reference, as amended)

NSF 20-605

Focused Research Hubs in Theoretical Physics

CFDA NUMBER:

47.049

OTHER AWARDS UNDER THIS PROGRAM:

Show List of Awards

AWARDEE: Harvard College, President & Fellows of Harvard University

PROJECT TITLE: Institute for Theoretical, Atomic, Molecular and Optical Physics (ITAMP)

PROJECT ABSTRACT: <https://www.fastlane.nsf.gov/servlet/showaward?award=2116679>

Principal Investigator(s)Proposal No.Institution (s)

PHY-2116679

Smithsonian Institution Astrophysical Observatory

Harvard College, President & Fellows of Harvard University

Smithsonian Institution

NSF_Harvard000067 Harvard College, President & Fellows of Harvard University

Vasili Kharchenko

Smithsonian Institution Astrophysical Observatory

NSF Contact Information:

Financial/Administrative questions: e-mail your NSF Grants and Agreements Official, Pamela Conyers, at pconyers@nsf.gov or call the Division at 703-292-5329.

Programmatic questions: e-mail your NSF Program Officer, Mike Cavagnero, at mcavagne@nsf.gov or call the Program Division at 703-292-7927.

This CA is entered into between the United States of America, represented by the National Science Foundation (NSF), and the above named Awardee pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 USC 1861-1875). This CA is provided electronically to the Awardee. The Awardee is responsible for full compliance with all Programmatic and Financial/Administrative Terms and Conditions as initially stated or as updated over the life of this CA. The Awardee's request to draw down funds under this CA will represent acceptance by the Awardee of all Terms and Conditions of the CA. The Authorized Organizational Representative (AOR) will be electronically notified of any changes to these Terms and Conditions and is encouraged to immediately review these changes and contact the Grants and Agreements Official or Program Officer within thirty days with any questions.

Financial/Administrative Terms and Conditions (FATC):**1) Award Specific FATC:**

A. Funds provided for participant support may not be diverted by the awardee to other categories of expense without the prior written approval of the cognizant NSF Program Officer. Since participant support cost is not a normal account classification, the awardee organization must be able to separately identify participant support costs. It is highly recommended that separate accounts, sub-accounts, sub-task, or sub-ledgers be established to accumulate these costs. The awardee should have written policies and procedures to segregate participant support costs.

B. Costs of entertainment, amusement, diversion and social activities, and any costs directly associated with such costs (such as meals, lodging, rentals, transportation and gratuities) are unallowable. When certain meals are an integral and necessary part of a conference or meeting (i.e., working meals where business is transacted), grant funds may be used for such meals. Grant funds may also be used to furnish a reasonable amount of coffee or soft drinks for conference or meeting participants and attendees during coffee breaks. No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

C. The Foundation authorizes the awardee to enter into the proposed contractual arrangements and to fund such arrangements with award funds up to the amount indicated in the approved budgets. Such contractual arrangements should contain appropriate provisions consistent with Articles 8.a.4. and 9 of the NSF Cooperative Agreement Financial & Administrative Terms and Conditions (CA-FATC) dated November 12, 2020, as well as any special conditions included in this award.

Programmatic Terms and Conditions (PTC):**1) Award Specific PTC:****1. Key Personnel.**

Except for the Principal Investigator (PI) identified in the award, requests to make any changes to key personnel, organizations, and/or

NSF_Harvard000068

partners specifically named in the proposal, that have been approved as part of the award, shall be submitted in writing to the cognizant NSF Program Official for approval prior to any changes taking effect. Request for prior approval of changes to the PI(s) must be submitted through FastLane or Research.gov or review by the cognizant NSF Program Official and approval by an NSF Grants Officer.

Award Specific Programmatic Terms and Conditions:

2. Program/Project Description.

The Focused Research Hubs in Theoretical Physics (FRHTP) are designed to enhance significant break throughs at an intellectual frontier of physics by providing resources beyond those available to individual investigators, so as to promote a collaborative approach to a focused topic while promoting the preparation of scientists at the beginning of their independent scientific careers.

Specifically, the FRHTP is asked to achieve five distinct goals: (1) advance theoretical physics in scientific areas relevant to the theory hub; (2) enhance the development of early-career scientists in theoretical physics; (3) support creative, substantive activities aimed at enhancing education, diversity, and public outreach; (4) demonstrate broader impacts, e.g., impacts on other field(s) and benefits to society; (5) demonstrate a synergy or value-added rationale that justifies a group approach.

The FRHTP will strive to lead in forefront research in theoretical physics and be an incubator for theoretical physics by emphasizing the development, mentoring, and career enhancement of a diverse group of post-doctoral theorists (Hub Fellows) working in a vibrant research environment with considerable intellectual freedom, access to an extensive community of potential theoretical and experimental research partners, and with a high degree of national and international exposure.

3. Project Governance.

The Awardee will ensure that an efficient and effective project governing structure is in place throughout the award period to support all critical or significant project activities.

The governance of the FRHTP consists of one Director(PI), who makes daily operating decisions and two decision-making bodies, the Executive Board (Co-PIs) and the Advisory Committee. The Director is responsible for the overall management of the programs and represents the leading university in communication with each of the decision-making bodies within FRHTP. The Executive Board oversees the mentoring of the Hub Fellows. The Executive Board will meet (virtually) bi-weekly to receive a report from the FRHTP Director, and discuss programmatic and administrative issues. The Advisory Committee provides advice and strategic recommendations. The Advisory Committee will provide an external perspective to ensure that the FRHTP research and training is of the highest caliber, as seen from a national and international perspective. Any change in the overall management structure must be approved by the cognizant NSF program officer in advance of the proposed change.

4. Governing Responsibilities.

The Awardee will ensure efficient and effective performance of all project responsibilities by the governing components throughout the award period. These responsibilities include:

As established by the Awardee, the programmatic activity at the FRHTP concerns Postdoc Selection, Training and Mentoring activities. Project decisions affecting the Hub Fellows and science will be made jointly by the FRHTP Director, the four members of the Executive Board and FRHTP senior personnel.

The Director will serve as the point-of-contact for the cognizant NSF Program Officer, including providing notification of any critical project management issues, such as changes in key personnel, cost, schedule, and funding profile prior to implementation of such changes. The Director is responsible for notifying NSF of any changes in the management structure.

The Director makes daily operating decisions for the FRHTP. Input from other participants in the FRHTP will be solicited as needed. The latter include the members of the Executive Board, Senior Participating Investigators and Affiliated Scientists.

The Executive Board is responsible for advising and mentoring the Hub Fellows. The Executive Board will meet (virtually) bi-weekly to receive a report from the FRHTP Director and discuss programmatic and administrative issues.

The Advisory Committee is responsible for providing advice and strategic recommendations to the Director and the Executive Board. The Advisory Committee will meet annually on the day preceding or following the annual FRHTP meeting, to review Hub science; recruitment and mentoring, outreach, diversity, and other professional development activities; participation in and initiation of workshops, programs, and schools; and quality of interactions with the broader physics community in the scientific areas relevant to the theory hub.

5. Reporting Requirements.

The Awardee will provide ad hoc and regular reports as designated by the NSF cognizant Program Official with content, format, and

submission timeline established by the NSF cognizant Program Official. The Awardee will submit all required reports via Research.gov using the appropriate reporting category; for any type of report not specifically mentioned in Research.gov, the Awardee will use the “Interim Reporting” function to submit reports.

The Awardee will supply annual and final reports as described in the Award and Administration Guide II.D1.

The Awardee was asked to submit a diversity plan for the FRHTP. In the annual and final reports under the section, “What is the impact on the development of human resources?” in Research.gov, the Awardee will discuss progress relative to that diversity plan. If needed, modifications of the diversity plan may be required.

6. Ongoing Project Oversight.

The Awardee will ensure full commitment and cooperation among the governing structure components, and all project staff during all ongoing NSF project management and oversight activities. The Awardee will ensure availability of all key institutional partners during any desk or on-site review as well as timely access to all project documentation.

The NSF will conduct site visit reviews of the operations of FRHTP in order to confirm that the organization continues to fulfill the goal of projects supported through the Physics Division and the requirements for the theory hub as outlined in the program solicitation NSF 20-605. Typically, site visits are being conducted in the second and fourth year of the project. If that a site visit review reveals that the organization is not fulfilling the goals of the program, the NSF may choose to phase out the funding for FRHTP.

7. Program-specific terms and conditions, if applicable.

Changes in the management structure must be communicated to the cognizant NSF program officer in advance, as noted in section 3.

Change History

Prior Awarded Funding Amount:

Per Amendment 004 on
08/15/2024: \$700,000
Per Amendment 002 on
08/14/2023: \$700,000
Per Amendment 001 on
07/19/2022: \$699,999
Per Original Award on
07/30/2021: \$699,998

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1839870

PI Name [REDACTED]

AWARD NOTICE

Award Date:
 Award No. (FAIN):
 Proposal No.:
 Managing Division Abbreviation:

September 10, 2018
 1839870
 1839870
 CMMI

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]:

The National Science Foundation hereby awards a grant of \$400,000 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above. This award is expected to total \$400,000.

This project, entitled "FW-HTF: Collaborative Research: The Next Mobile Office: Safe and Productive Work in Automated Vehicles," is under the direction of [REDACTED], in collaboration with the following proposals

Proposal No:	PI Name/Institution
-----	-----
1840085	[REDACTED]
[REDACTED] University of New Hampshire	[REDACTED]
1839484	[REDACTED]
The University of Wisconsin - Madison	[REDACTED]
1839666	[REDACTED]
[REDACTED] University of Washington	[REDACTED]
1840031	[REDACTED]
[REDACTED] Wellesley College	[REDACTED]

.

This award starts September 15, 2018 and ends August 31, 2022.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated May 14, 2018, available at: <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots..

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

This award is subject to the provisions of program solicitation NSF 18-548, entitled "Future of Work at the Human - Technology Frontier: Advancing Cognitive and Physical Capabilities (FW-HTF)".

PIs or their designees must participate in annual Principal Investigator meetings throughout the duration of their awards, including during any period of No Cost Extensions. For multi-institution projects, investigators from each collaborating

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1839870

PI Name: [REDACTED]

institution are expected to participate. A substitute project representative may be designated to attend a PI meeting, but only with prior approval from a cognizant NSF Program Officer.

It is the grantee's responsibility to ensure that any human subjects work conducted under this award has an Institutional Review Board (IRB) approval, where required, and that such approval remains valid at all times that human subjects work is conducted under the award. Failure to comply with this condition will result in suspension and/or termination of the award.

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name

Indirect Cost Rate

Modified Total Direct Costs

69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Please view the project reporting requirements for this award at the following web address [<https://reporting.research.gov/fedAwardId/1839870>].

The cognizant NSF program official for this grant is Irina Dolinskaya, (703) 292-7078

The cognizant NSF grants official contact is Jessie L. Richardson, (703) 292-4811.

Sincerely,

Jessie L. Richardson
Grants and Agreements Officer

CFDA No. 47.041, Engineering Grants

CMMI-1839870

000

SUMMARY PROPOSAL BUDGET

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (0.00) Total Senior personnel	0.00	0.00	0.00	\$0
B. Other Personnel				
1. (2.00) Post Doctoral associates	19.49	0.00	0.00	\$115,063
2. (0.00) Other professionals	0.00	0.00	0.00	\$0
3. (0.00) Graduate students				\$0
4. (0.00) Secretarial-clerical				\$0
5. (4.00) Undergraduate students				\$42,169
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$157,232
C. Fringe benefits (if charged as direct cost)				\$32,389
Total salaries wages and fringes (A+B+C)				\$189,621
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$26,206
2. International				\$0
F. Total participant support costs				\$0
G. Other direct costs				

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1839870

PI Name:

1. Materials and supplies	\$3,000
2. Publication costs/page charges	\$0
3. Consultant services	\$0
4. Computer (ADPE) services	\$0
5. Subawards	\$0
6. Other	\$17,859
Total other direct costs	\$20,859
H. Total direct costs (A through G)	\$236,686
I. Total indirect costs	\$163,314
(For information on the rate used, please refer to the award notice)	
J. Total direct and indirect costs (H+I)	\$400,000
K. Small Business Fee	\$0
L. Amount of this request (J) or (J+K)	\$400,000
M. Cost sharing	\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1839870

PI Name: [REDACTED]

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1839870

Managing Division Abbreviation:
CMMI

Amendment Number: 002

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address: [REDACTED]

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: No Cost Extensions

Amendment Date: 07/22/2024

Amendment Number: 002

Proposal Number: Not Applicable

Amendment Description:

The purpose of this amendment is to extend the end date from 08/31/2024 to 08/31/2025 in accordance with the NSF Approved No-Cost Extension request submitted on 07/15/2024 without additional funds to allow for the completion of the agreed-to level of effort.

Except as modified by this amendment, the award conditions remain unchanged.

PROJECT PERSONNEL

Principal Investigator: [REDACTED]
[REDACTED]

Email: [REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)
Name: Tamika Lloyd
Email: tlloyd@nsf.gov

Awarding Official
Name: Willis Phan
Email: wiphan@nsf.gov

Managing Program Officer
Name: Jordan M. Berg
Email: jberg@nsf.gov
Phone: (703) 292-5365

Phone:

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1841403

PI Name: [REDACTED]

AWARD NOTICE

Award Date:	March 15, 2019
Award No. (FAIN):	1841403
Proposal No.:	1841403
Managing Division Abbreviation:	CNS

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]:

The National Science Foundation hereby awards a grant of \$100,000 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above. This award is expected to total \$500,000.

This project, entitled "Phase II I/UCRC Harvard: Center for Spatiotemporal Thinking, Computing and Applications (STCA)" is under the direction of [REDACTED]

This award starts March 15, 2019 and ends February 29, 2024.

This is a continuing grant which has been approved on scientific / technical merit. Contingent on the availability of funds and the scientific progress of the project, NSF expects to continue support at approximately the following level:

FY 2020	\$100,000
FY 2021	\$100,000
FY 2022	\$100,000
FY 2023	\$100,000

The scientific / technical progress of the project is documented through submission and approval of annual and final project reports to NSF. Such reports are to be submitted electronically via NSF's Research.gov web portal [<http://www.research.gov/>]. Information regarding the specific due dates of such reports also is available through Research.gov.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated February 25, 2019, available at: <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots. and the following terms and conditions:

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

This award is subject to the provisions of NSF 17-516, Industry-University Cooperative Research Centers Program.

This award is made contingent on this IUCRC site meeting minimum membership

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1841403

PI Name: [REDACTED]

requirements and other program expectations, as detailed in the solicitation NSF 17-516. A timely annual report to be submitted by the PI will be used to verify compliance with program requirements, and NSF approval of the annual report is necessary before future year obligations will be released on this award.

Please view the project reporting requirements for this award at the following web address [https://reporting.research.gov/fedAwardId/1841403].

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name

Indirect Cost Rate

Modified Total Direct Costs

34.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

The cognizant NSF program official for this grant is Dmitri Perkins, (703) 292-8950.

The cognizant NSF grants official contact is Tianay Robinson, (703) 292-7859.

Sincerely,

Tianay Robinson
Grants and Agreements Officer

CFDA No. 47.070, Computer and Information Science and Engineering

CNS-1841403

000

SUMMARY PROPOSAL BUDGET

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (3.00) Total Senior personnel	2.50	0.00	0.00	\$29,027
B. Other Personnel				
1. (0.00) Post Doctoral associates	0.00	0.00	0.00	\$0
2. (1.00) Other professionals	1.20	0.00	0.00	\$10,162
3. (0.00) Graduate students				\$0
4. (0.00) Secretarial-clerical				\$0
5. (0.00) Undergraduate students				\$0
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$39,189
C. Fringe benefits (if charged as direct cost)				\$14,942
Total salaries wages and fringes (A+B+C)				\$54,131
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$11,700
2. International				\$0
F. Total participant support costs				\$0
G. Other direct costs				
1. Materials and supplies				\$6,796
2. Publication costs/page charges				\$2,000
3. Consultant services				\$0
4. Computer (ADPE) services				\$0
5. Subawards				\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1841403

PI Name

6. Other	\$0
Total other direct costs	\$8,796
H. Total direct costs (A through G)	\$74,627
I. Total indirect costs	\$25,373
(For information on the rate used, please refer to the award notice)	
J. Total direct and indirect costs (H+I)	\$100,000
K. Fee	\$0
L. Amount of this request (J) or (J+K)	
\$100,000	
M. Cost sharing	\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1841403

PI Name



NATIONAL SCIENCE FOUNDATION**Award Notice****Award Number (FAIN):** 1841403**Managing Division**
Abbreviation: CNS**Amendment Number:** 012**RECIPIENT INFORMATION****Recipient (Legal Business Name):** PRESIDENT AND FELLOWS OF HARVARD COLLEGE**Recipient Address:** 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366**Official Recipient Email Address:** [REDACTED]**Unique Entity Identifier (UEI):** LN53LCFJFL45**AMENDMENT INFORMATION****Amendment Type:** Other Admin No Fund Actions**Amendment Date:** 02/18/2025**Amendment Number:** 012**Proposal Number:** Not Applicable**Amendment Description:**

The purpose of this amendment is to change the PI or co-PI in accordance with the Withdrawal of PI/Co-PI request submitted on 02/14/2025. Effective with this amendment, the project is now under the direction of [REDACTED]

Except as modified by this amendment, the award conditions remain unchanged.

PROJECT PERSONNEL**Principal Investigator:**

[REDACTED]

Email:

[REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE**co-Principal Investigator:**

[REDACTED]

Email:

[REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE**NSF CONTACT INFORMATION****Managing Grants Official****Awarding Official****Managing Program**

(Primary Contact)

Name: Jannele L. Gosey

Email: jgosey@nsf.gov

Phone: (703) 292-4445

Name: LeVar R. Farrior

Email: lfarrior@nsf.gov

Officer

Name: Mohan Kumar

Email: mokumar@nsf.gov

Phone: (703) 292-7408

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1856215

PI Name: [REDACTED]

AWARD NOTICE

Award Date:	June 7, 2019
Award No. (FAIN):	1856215
Proposal No.:	1856215
Managing Division Abbreviation:	ICER

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]:

The National Science Foundation hereby awards a grant of \$67,798 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above. This award is expected to total \$201,125.

This project, entitled "Belmont Forum Collaborative Research: Governance of Sociotechnical Transformations," is under the direction of [REDACTED].

This award starts June 15, 2019 and ends May 31, 2022.

This is a continuing grant which has been approved on scientific / technical merit. Contingent on the availability of funds and the scientific progress of the project, NSF expects to continue support at approximately the following level:

FY 2020	\$76,408
FY 2021	\$56,919

The scientific / technical progress of the project is documented through submission and approval of annual and final project reports to NSF. Such reports are to be submitted electronically via NSF's Research.gov web portal [<http://www.research.gov/>]. Information regarding the specific due dates of such reports also is available through Research.gov.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated February 25, 2019, available at: <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots. .

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

The Foundation authorizes the awardee to enter into the proposed subaward arrangement and to fund the subaward with award funds up to the amount indicated in the approved budget or NSF-approved post award request. The subaward should contain appropriate provisions consistent with Appendix B of the Research Terms and Conditions (RTC) dated October 1, 2017, or Articles 8.a.4. and 9 of the NSF Grant General Conditions (GC-1) dated February 25, 2019 (as appropriate), as well

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1856215

PI Name: [REDACTED]

as any special conditions included in this award.

Please view the project reporting requirements for this award at the following web address [<https://reporting.research.gov/fedAwardId/1856215>].

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name

Indirect Cost Rate

Modified Total Direct Costs

69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

The cognizant NSF program official for this grant is Maria Uhle, (703) 292-2250. The cognizant NSF grants official contact is Malia Hairston, (703) 292-2290.

Sincerely,

Willie Powell
Grants and Agreements Officer

CFDA No. 47.050. Geosciences

[REDACTED]

ICER-1856215 000
SUMMARY PROPOSAL BUDGET

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (0.00) Total Senior personnel	0.00	0.00	0.00	\$0
B. Other Personnel				
1. (1.00) Post Doctoral associates	6.00	0.00	0.00	\$22,750
2. (0.00) Other professionals	0.00	0.00	0.00	\$0
3. (0.00) Graduate students				\$0
4. (0.00) Secretarial-clerical				\$0
5. (0.00) Undergraduate students				\$0
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$22,750
C. Fringe benefits (if charged as direct cost)				\$5,847
Total salaries wages and fringes (A+B+C)				\$28,597
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$0
2. International				\$1,200
F. Total participant support costs				\$0
G. Other direct costs				
1. Materials and supplies				\$0
2. Publication costs/page charges				\$0
3. Consultant services				\$0
4. Computer (ADPE) services				\$0
5. Subawards				\$10,320
6. Other				\$0
Total other direct costs				\$10,320
H. Total direct costs (A through G)				\$40,117

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1856215**PI Name:** [REDACTED]

I. Total indirect costs	\$27,681
(For information on the rate used, please refer to the award notice)	
J. Total direct and indirect costs (H+I)	\$67,798
K. Fee	\$0
L. Amount of this request (J) or (J+K)	
\$67,798	
M. Cost sharing	\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1856215

PI Name: [REDACTED]

NATIONAL SCIENCE FOUNDATION**Award Notice****Award Number (FAIN):** 1856215**Managing Division**
Abbreviation: RISE**Amendment Number:** 004**RECIPIENT INFORMATION****Recipient (Legal Business Name):** PRESIDENT AND FELLOWS OF HARVARD COLLEGE**Recipient Address:** 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366**Official Recipient Email Address:** [REDACTED]**Unique Entity Identifier (UEI):** LN53LCFJFL45**AMENDMENT INFORMATION****Amendment Type:** No Cost Extensions**Amendment Date:** 11/22/2024**Amendment Number:** 004**Proposal Number:** Not Applicable**Amendment Description:**

The purpose of this amendment is to extend the end date from 11/30/2024 to 11/30/2025 in accordance with the NSF Approved No-Cost Extension request submitted on 11/19/2024 without additional funds to allow for the completion of the agreed-to level of effort.

Except as modified by this amendment, the award conditions remain unchanged.

PROJECT PERSONNEL**Principal Investigator:**

[REDACTED]

Email:

[REDACTED]

Organization:PRESIDENT AND
FELLOWS OF
HARVARD COLLEGE**NSF CONTACT INFORMATION****Managing Grants Official**
(Primary Contact)**Name:** Angela A. Turner**Email:** aturner@nsf.gov**Phone:** (703) 292-7524**Awarding Official****Name:** Shirley R. Kerchner**Email:** skerchne@nsf.gov**Managing Program Officer****Name:** Maria L Uhle**Email:** muhle@nsf.gov**Phone:** (703) 292-2250

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1907398

PI Name: [REDACTED]

AWARD NOTICE

Award Date:
 Award No. (FAIN):
 Proposal No.:
 Managing Division Abbreviation:

July 3, 2019
 1907398
 1907398
 DRL

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]

The National Science Foundation hereby awards a grant of \$231,294 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above as modified by cover page dated December 5, 2018. This award is expected to total \$575,784.

This project, entitled "Collaborative Research: Developing an Online Game to Teach Middle School Students Science Research Practices in the Life Sciences," is under the direction of

[REDACTED] in collaboration with the following proposals

Proposal No: PI Name/Institution

1907384

[REDACTED], The University of Wisconsin - Madison

1907437

[REDACTED], University of Pennsylvania

.

This award starts July 1, 2019 and ends June 30, 2023.

This is a continuing grant which has been approved on scientific / technical merit. Contingent on the availability of funds and the scientific progress of the project, NSF expects to continue support at approximately the following level:

FY 2021	\$169,767
FY 2022	\$174,723

The scientific / technical progress of the project is documented through submission and approval of annual and final project reports to NSF. Such reports are to be submitted electronically via NSF's Research.gov web portal [<http://www.research.gov/>]. Information regarding the specific due dates of such reports also is available through Research.gov.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated February 25, 2019, available at: <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots. .

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1907398

PI Name: [REDACTED]

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

This award is subject to the provisions of NSF 17-584, Discovery Research PreK-12 (DRK-12).

The DRK-12 program has awarded a dissemination and evaluation network project as a cooperative agreement. The resource network is responsible for synthesizing findings across the DRK-12 portfolio, providing technical assistance to DRK-12 projects, promoting national awareness of research contributions from the DRK-12 portfolio, and building the DRK-12 community through PI and special interest meetings. All DRK-12 projects are expected to share their findings with the resource network, to participate in annual PI meetings, and other meetings of interest and to be responsive to requests for information from the resource network.

No work with human subjects, including recruitment, may be conducted under this protocol or grant until IRB approval has been obtained.

Funds provided for participant support may not be diverted by the awardee to other categories of expense without the prior written approval of the cognizant NSF Program Officer. Since participant support cost is not a normal account classification, the awardee organization must be able to separately identify participant support costs. It is highly recommended that separate accounts, sub-accounts, sub-task, or sub-ledgers be established to accumulate these costs. The awardee should have written policies and procedures to segregate participant support costs.

This award includes, within the approved budget, monetary compensation for survey respondents. Such compensation is defined as Subject Payments. Compensation to subjects under this award must be made in accordance with written institutional policies and procedures and supported by auditable documentation. The allowability of these costs will ultimately be based on the awardee institution's ability to adequately demonstrate that Subject Payments have been disbursed in accordance with its policies and procedures.

Please view the project reporting requirements for this award at the following web address [<https://reporting.research.gov/fedAwardId/1907398>].

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name
Indirect Cost Rate

MTDC 69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

The cognizant NSF program official for this grant is Robert Russell, (703) 292-2995.

The cognizant NSF grants official contact is Daniel McEnrue, (703) 292-8386.

Sincerely,

LeVar Farrior
Grants and Agreements Officer

CFDA No. 47.076, Education and Human Resources

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1907398

PI Name: [REDACTED]

DRL-1907398
SUMMARY PROPOSAL BUDGET

000

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (2.00) Total Senior personnel	9.00	0.00	0.00	\$80,298
B. Other Personnel				
1. (0.00) Post Doctoral associates	0.00	0.00	0.00	\$0
2. (0.00) Other professionals	0.00	0.00	0.00	\$0
3. (1.00) Graduate students				\$13,685
4. (0.00) Secretarial-clerical				\$0
5. (0.00) Undergraduate students				\$0
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$93,983
C. Fringe benefits (if charged as direct cost)				\$33,580
Total salaries wages and fringes (A+B+C)				\$127,563
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$7,522
2. International				\$0
F. Total participant support costs				\$3,000
G. Other direct costs				
1. Materials and supplies				\$0
2. Publication costs/page charges				\$0
3. Consultant services				\$0
4. Computer (ADPE) services				\$0
5. Subawards				\$0
6. Other				\$0
Total other direct costs				\$0
H. Total direct costs (A through G)				\$138,085
I. Total indirect costs				\$93,209
(For information on the rate used, please refer to the award notice)				
J. Total direct and indirect costs (H+I)				\$231,294
K. Fee				\$0
L. Amount of this request (J) or (J+K)				\$231,294
M. Cost sharing				\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1907398

PI Name [REDACTED]

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1907398

Managing Division Abbreviation: DRL

Amendment Number: 003

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address: [REDACTED]

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Supplement

Amendment Date: 12/18/2024

Amendment Number: 003

Proposal Number: 2426729

Amendment Description:

The purpose of this amendment is to:

- Add supplemental support to the award in the amount shown below in the Funding Information section.
- Extend the end date from 06/30/2025 to 12/31/2025.

In accordance with 2 CFR 200, Appendix III, C.7, the grantee must use the negotiated rates for indirect costs (F&A) in effect at the time of the initial award throughout the life of the sponsored agreement (including any continuing grant increments and any supplemental funding awarded under the agreement.) Award levels for sponsored agreements may not be adjusted in future years as a result of changes in negotiated rates.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 1907398

Award Instrument: Continuing Grant

Award Date: 07/03/2019

Award Period of Performance: Start Date: 07/01/2019 End Date: 12/31/2025

Project Title: Collaborative Research: Developing an Online Game to Teach Middle School Students Science Research Practices in the Life Sciences

Managing Division Abbreviation: DRL

Research and Development Award: Yes

Funding Opportunity: NSF 17-584 Discovery Research PreK-12

Assistance Listing Number(s) and Name(s): 47.076 Education and Human Resources (See Amendment 000 for source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$99,021

Total Intended Award Amount: \$575,784

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$674,805

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Organization:

PRESIDENT AND
FELLOWS OF HARVARD
COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Tracy N. Shields

Email: tshields@nsf.gov

Phone: (703) 292-4882

Awarding Official

Name: Tracy N. Shields

Email: tshields@nsf.gov

Managing Program Officer

Name: Robert L Russell

Email: rlrussel@nsf.gov

Phone: (703) 292-2995

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to NSF Grant General Conditions (GC-1), dated 10/01/2024, available at https://www.nsf.gov/awards/managing/general_conditions.jsp.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel	
Senior Personnel Count	1.00
Senior Personnel Calendar Months	3.24
Senior Personnel Academic	0.00

Months	
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$34,866
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	0.00
Post Doctoral Calendar Months	0.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$0
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	1.00
Graduate Students Amount	\$4,724
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$39,590
C. Fringe Benefits	\$14,863
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$54,453
D. Equipment	\$0
E. Travel	
Domestic	\$1,956
International	\$0
F. Participant Support Costs	
Participant Support Costs Stipends	\$2,000
Participant Support Costs Travel	\$0
Participant Support Costs	\$0

Subsistence	
Participant Support Costs Other	\$0
Total Number of Participants	10.00
<i>Total Participant Costs (F)</i>	\$2,000
G. Other Direct Costs	
Materials Supplies	\$0
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$1,000
<i>Total Other Direct Costs (G)</i>	\$1,000
H. Total Direct Costs (A Through G)	\$59,409
I. Indirect Costs*	\$39,612
J. Total Direct and Indirect Costs (H + I)	\$99,021
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$99,021
M. Cost Sharing Proposed Level	\$0

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1914916

Managing Division Abbreviation: PHY

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project

Amendment Date: 08/15/2020

Amendment Number: 000

Proposal Number: 1914916

Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above as modified by revised budget dated 07/09/2020.

AWARD INFORMATION

Award Number (FAIN): 1914916

Award Instrument: Continuing Grant

Award Date: 08/15/2020

Award Period of Performance: Start Date: 08/15/2020 End Date: 07/31/2025

Project Title: The Evolution of Evolvability in Microbial Populations

Managing Division Abbreviation: PHY

Research and Development Award: Yes

Funding Opportunity: NSF 18-564 Division of Physics: Investigator-Initiated Research Projects

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$159,554

Total Intended Award Amount: \$797,669

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$159,554

Expenditure Limitation: Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

Fiscal Year	Increment Amount
2021	\$159,755
2022	\$158,130
2023	\$159,936
2024	\$160,294

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Institution: Harvard University

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Pamela V. Conyers

Email: pconyers@nsf.gov

Awarding Official

Name: Pamela V. Conyers

Email: pconyers@nsf.gov

Managing Program Officer

Name: Krastan B Blagoev

Email: kblagoev@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 18-564 Division of Physics: Investigator-Initiated Research Projects.

BUDGET

A. Senior Personnel	
Senior Personnel Count	1.00
Senior Personnel Calendar Months	0.60
Senior Personnel Academic	0.00

Months	
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$14,300
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	1.00
Post Doctoral Calendar Months	6.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$24,750
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	1.00
Graduate Students Amount	\$19,750
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$58,800
C. Fringe Benefits	\$9,827
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$68,627
D. Equipment	\$0
E. Travel	
Domestic	\$0
International	\$0
F. Participant Support Costs	
Participant Support Costs Stipends	\$0
Participant Support Costs	\$0

Travel	
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	
Materials Supplies	\$12,500
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$15,856
<i>Total Other Direct Costs (G)</i>	\$28,356
H. Total Direct Costs (A Through G)	\$96,983
I. Indirect Costs*	\$62,571
J. Total Direct and Indirect Costs (H + I)	\$159,554
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$159,554
M. Cost Sharing Proposed Level	\$0

*Indirect Cost Rates

Item Name	Indirect Cost Rate
MTDC	69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1914916

Managing Division
Abbreviation: PHY

Amendment Number: 002

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University
Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369
Official Awardee Email Address: [REDACTED]
Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: Other Admin No Fund Actions
Amendment Date: 10/15/2020
Amendment Number: 002
Proposal Number: Not Applicable
Amendment Description:

This amendment replaces Term #1 implementing Section § 200.216 of the revised 2 CFR § 200 which was published in the Federal Register on [August 13, 2020](#).

Except as modified by this amendment, the award conditions remain unchanged.

1. Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019

Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Public Law 115-232) prohibits the head of an executive agency from obligating or expending loan or grant funds to procure or obtain, extend, or renew a contract to procure or obtain, or enter into a contract (or extend or renew a contract) to procure or obtain the equipment, services, or systems prohibited systems as identified in section 889 of the NDAA for FY 2019.

(a) In accordance with 2 CFR 200.216 and 200.471, all awards that are issued on or after August 13, 2020, recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:

- (1) Procure or obtain;
- (2) Extend or renew a contract to procure or obtain; or

(3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

(i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

(ii) Telecommunications or video surveillance services provided by such entities or using such equipment.

(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

(c) See Public Law 115-232, section 889 for additional information.

COVERED FOREIGN COUNTRY means the People's Republic of China.

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Institution: Harvard University

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Pamela V. Conyers

Email: pconyers@nsf.gov

Awarding Official

Name: Pamela A. Hawkins

Email: pahawkin@nsf.gov

Managing Program Officer

Name: Krastan B Blagoev

Email: kblagoev@nsf.gov

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1919073

PI Name [REDACTED]

AWARD NOTICE

Award Date:
 Award No. (FAIN):
 Proposal No.:
 Managing Division Abbreviation:

July 29, 2019
 1919073
 1919073
 SES

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]

The National Science Foundation hereby awards a grant of \$195,153 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above as modified by revised budget dated June 24, 2019. This award is expected to total \$195,153.

This project, entitled "Collaborative research: Emirical Evidence of the Tax Administration Production Function," is under the direction of [REDACTED], in collaboration with the following proposals

Proposal No: PI Name/Institution

 1919437

[REDACTED] Massachusetts Institute of Technology [REDACTED]

.

This award starts August 15, 2019 and ends July 31, 2022.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated February 25, 2019, available at:
<https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots..

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

It is the grantee's responsibility to ensure that any human subjects work conducted under this award has an Institutional Review Board (IRB) approval, where required, and that such approval remains valid at all times that human subjects work is conducted under the award. Failure to comply with this condition will result in suspension and/or termination of the award.

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name
 Indirect Cost Rate

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1919073

PI Name

Predetermined On-Campus Research 69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

Please view the project reporting requirements for this award at the following web address [<https://reporting.research.gov/fedAwardId/1919073>].

The cognizant NSF program official for this grant is Kwabena Gyimah-Brempong, (703) 292-7466
The cognizant NSF grants official contact is Malia Williams, (703) 292-2290.

Sincerely,

Willie Powell
Grants and Agreements Officer

CFDA No. 47.075. Social, Behavioral, and Economic Sciences

SES-1919073
SUMMARY PROPOSAL BUDGET

000

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (1.00) Total Senior personnel	0.00	0.00	0.70	\$19,972
B. Other Personnel				
1. (0.00) Post Doctoral associates	0.00	0.00	0.00	\$0
2. (0.00) Other professionals	0.00	0.00	0.00	\$0
3. (3.00) Graduate students				\$73,119
4. (0.00) Secretarial-clerical				\$0
5. (0.00) Undergraduate students				\$0
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$93,091
C. Fringe benefits (if charged as direct cost)				\$18,445
Total salaries wages and fringes (A+B+C)				\$111,536
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$0
2. International				\$3,938
F. Total participant support costs				\$0
G. Other direct costs				
1. Materials and supplies				\$0
2. Publication costs/page charges				\$0
3. Consultant services				\$0
4. Computer (ADPE) services				\$0
5. Subawards				\$0
6. Other				\$0
Total other direct costs				\$0
H. Total direct costs (A through G)				\$115,474
I. Total indirect costs				\$79,679
(For information on the rate used, please refer to the award notice)				
J. Total direct and indirect costs (H+I)				\$195,153
K. Fee				\$0
L. Amount of this request (J) or (J+K)				\$195,153
M. Cost sharing				\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1919073

PI Name:



NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1919073

Managing Division
Abbreviation: SES

Amendment Number: 001

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE
Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366
Official Recipient Email Address: [REDACTED]
Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: No Cost Extensions
Amendment Date: 03/18/2024
Amendment Number: 001
Proposal Number: Not Applicable
Amendment Description:

The purpose of this amendment is to extend the end date from 07/31/2024 to 07/31/2025 in accordance with the NSF Approved No-Cost Extension request submitted on 03/05/2024 without additional funds to allow for the completion of the agreed-to level of effort.

Except as modified by this amendment, the award conditions remain unchanged.

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Awarding Official
Name: Willie M. Powell

Managing Program
Officer

Name: Tyffani N. Smith
Email: tnsmith@nsf.gov
Phone: (703) 292-7046

Email: wpowell@nsf.gov

Name: Kwabena Gyimah-Brempong
Email: kgyimahb@nsf.gov
Phone: (703) 292-7466

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1942438

Managing Division Abbreviation: BCS

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project

Amendment Date: 08/05/2020

Amendment Number: 000

Proposal Number: 1942438

Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above .

No human subjects may be involved in the project until the protocol has either been declared exempt or the protocol has been reviewed and approved by the organization's Institutional Review Board, and certification has been submitted to the cognizant NSF Program Officer.

This award includes, within the approved budget, monetary compensation for survey respondents. Such compensation is defined as Subject Payments. Compensation to subjects under this award must be made in accordance with written institutional policies and procedures and supported by auditable documentation. The allowability of these costs will ultimately be based on the awardee institution's ability to adequately demonstrate that Subject Payments have been disbursed in accordance with its policies and procedures.

Costs of entertainment, amusement, diversion and social activities, and any costs directly associated with such costs (such as meals, lodging, rentals, transportation and gratuities) are unallowable. When certain meals are an integral and necessary part of a conference or meeting (i.e., working meals where business is transacted), grant funds may be used for such meals. Grant funds may also be used to furnish a reasonable amount of coffee or soft drinks for conference or meeting participants and attendees during coffee breaks. No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

AWARD INFORMATION**Award Number (FAIN):** 1942438**Award Instrument:** Continuing Grant**Award Date:** 08/05/2020**Award Period of Performance:** Start Date: 09/01/2020 End Date: 08/31/2025**Project Title:** CAREER: The Tuning and Topography of the Ventral Visual Stream**Managing Division Abbreviation:** BCS**Research and Development Award:** Yes**Funding Opportunity:** NSF 17-537 Faculty Early Career Development Program**CFDA Number and Name:** 47.075 Social, Behavioral, and Economic Sciences**FUNDING INFORMATION****Amount Obligated by this Amendment:** \$154,101**Total Intended Award Amount:** \$703,757**Total Approved Cost Share or Matching Amount:** \$0**Total Amount Obligated to Date:** \$154,101**Expenditure Limitation:** Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

Fiscal Year	Increment Amount
2021	\$145,256
2022	\$146,716
2023	\$128,080
2024	\$129,604

Principal Investigator:**Email:****Institution:** Harvard University**NSF CONTACT INFORMATION****Managing Grants Official**

(Primary Contact)

Name: Christine Castell**Email:** ccastell@nsf.gov**Awarding Official****Name:** Willie M. Powell**Email:** wpowell@nsf.gov**Managing Program Officer****Name:** Kurt Thoroughman**Email:** kthoroug@nsf.gov**GENERAL TERMS AND CONDITIONS**

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rte.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 17-537 Faculty Early Career Development Program.

BUDGET

A. Senior Personnel	
Senior Personnel Count	1.00
Senior Personnel Calendar Months	1.00
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$11,673
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	1.00
Post Doctoral Calendar Months	4.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$18,333
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	0.00
Graduate Students Amount	\$0
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students	\$0

Amount	
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$30,006
C. Fringe Benefits	\$7,283
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$37,289
D. Equipment	\$0
E. Travel	
Domestic	\$6,485
International	\$0
F. Participant Support Costs	
Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	
Materials Supplies	\$7,180
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$40,230
<i>Total Other Direct Costs (G)</i>	\$47,410
H. Total Direct Costs (A Through G)	\$91,184
I. Indirect Costs*	\$62,917
J. Total Direct and Indirect Costs (H + I)	\$154,101
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$154,101
M. Cost Sharing Proposed Level	\$0

*Indirect Cost Rates

Item Name	Indirect Cost Rate
MTDC	69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 1942438

Managing Division Abbreviation: BCS

Amendment Number: 005

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366

Official Recipient Email Address: [REDACTED]

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Increment

Amendment Date: 07/01/2024

Amendment Number: 005

Proposal Number: Not Applicable

Amendment Description:

The purpose of this amendment is to add incremental funding to the award in the amount shown below in the Funding Information section.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 1942438

Award Instrument: Continuing Grant

Award Date: 08/05/2020

Award Period of Performance: Start Date: 09/01/2020 End Date: 08/31/2025

Project Title: CAREER: The Tuning and Topography of the Ventral Visual Stream

Managing Division Abbreviation: BCS

Research and Development Award: Yes

Funding Opportunity: NSF 17-537 Faculty Early Career Development Program

Assistance Listing Number(s) and Name(s): 47.075 Social, Behavioral, and Economic Sciences (See Amendment 000 for source of funding for SEFA reporting)

FUNDING INFORMATION

Amount Obligated by this Amendment: \$129,604
Total Intended Award Amount: \$703,757
Total Approved Cost Share or Matching Amount: \$0
Total Amount Obligated to Date: \$703,757

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official

(Primary Contact)

Name: Tyffani N. Smith

Email: tnsmith@nsf.gov

Phone: (703) 292-7046

Awarding Official

Name: Tyffani N. Smith

Email: tnsmith@nsf.gov

Managing Program Officer

Name: Dwight Kravitz

Email: dkravitz@nsf.gov

Phone: (703) 292-4502

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 05/20/2024, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel	
Senior Personnel Count	1.00
Senior Personnel Calendar Months	1.00
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$13,767
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	1.00

Post Doctoral Calendar Months	4.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$19,942
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	0.00
Graduate Students Amount	\$0
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$33,709
C. Fringe Benefits	\$8,175
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$41,884
D. Equipment	\$0
E. Travel	
Domestic	\$6,485
International	\$0
F. Participant Support Costs	
Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	

Materials Supplies	\$0
Publication Costs	\$2,000
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$26,320
<i>Total Other Direct Costs (G)</i>	<i>\$28,320</i>
H. Total Direct Costs (A Through G)	\$76,689
I. Indirect Costs*	\$52,915
J. Total Direct and Indirect Costs (H + I)	\$129,604
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$129,604
M. Cost Sharing Proposed Level	\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1943902

PI Name: [REDACTED]

AWARD NOTICE

Award Date:	December 17, 2019
Award No. (FAIN):	1943902
Proposal No.:	1943902
Managing Division Abbreviation:	DMS

[REDACTED]
 Director, Office of Grants Administration
 Harvard College, President & Fellows of
 Harvard University
 1033 Massachusetts Ave
 5th Floor
 Cambridge, MA 02138-5369
 DUNS ID: 082359691

Dear [REDACTED]:

The National Science Foundation hereby awards a grant of \$75,766 to Harvard College, President & Fellows of Harvard University for support of the project described in the proposal referenced above as modified by revised budget dated December 9, 2019. This award is expected to total \$400,000.

This project, entitled "CAREER: Learning Probabilistic Factor Models," is under the direction of

[REDACTED]
 Redacted Post-Production

This award starts July 1, 2020 and ends June 30, 2025.

This is a continuing grant which has been approved on scientific / technical merit. Contingent on the availability of funds and the scientific progress of the project, NSF expects to continue support at approximately the following level:

FY 2021	\$77,821
FY 2022	\$79,935
FY 2023	\$82,115
FY 2024	\$84,363

The scientific / technical progress of the project is documented through submission and approval of annual and final project reports to NSF. Such reports are to be submitted electronically via NSF's Research.gov web portal [<http://www.research.gov/>]. Information regarding the specific due dates of such reports also is available through Research.gov.

This grant is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated March 14, 2017, and NSF Agency Specific Requirements, dated February 25, 2019, available at: <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots. and the following terms and conditions:

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into the NSF Terms and Conditions referenced above.

If the awardee has any questions related to the pre-populated data associated with this award in the FFATA Subaward Reporting System, such questions should be submitted to: FFATAREporting@nsf.gov or by phone to: (800) 673-6188.

This award is subject to the provisions of NSF 17-537, Faculty Early Career Development Program.

Please view the project reporting requirements for this award at the following web

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1943902

PI Name: [REDACTED]

address .

The attached budget indicates the amounts, by categories, on which NSF has based its support.

The indirect cost rate(s) for this award is/are :

Item Name

Indirect Cost Rate

MTDC

69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

The cognizant NSF program official for this grant is Huixia Wang, (703) 292-2279. The cognizant NSF grants official contact is Lynda Kummelt, (703) 292-7721.

Sincerely,

Elizabeth Gebremedhin
Grants and Agreements Officer

CFDA No. 47.049, Mathematical and Physical Sciences

DMS-1943902

000

SUMMARY PROPOSAL BUDGET

Person MOS	cal	acad	sumr	Funds granted By NSF
A. (1.00) Total Senior personnel	1.71	0.00	0.00	\$27,907
B. Other Personnel				
1. (0.00) Post Doctoral associates	0.00	0.00	0.00	\$0
2. (0.00) Other professionals	0.00	0.00	0.00	\$0
3. (1.00) Graduate students				\$6,035
4. (0.00) Secretarial-clerical				\$0
5. (0.00) Undergraduate students				\$0
6. (0.00) Other				\$0
Total salaries and wages (A+B)				\$33,942
C. Fringe benefits (if charged as direct cost)				\$6,586
Total salaries wages and fringes (A+B+C)				\$40,528
D. Total permanent equipment				\$0
E. Travel				
1. Domestic				\$2,152
2. International				\$2,152
F. Total participant support costs				\$0
G. Other direct costs				
1. Materials and supplies				\$0
2. Publication costs/page charges				\$0
3. Consultant services				\$0
4. Computer (ADPE) services				\$0
5. Subawards				\$0
6. Other				\$0
Total other direct costs				\$0
H. Total direct costs (A through G)				\$44,832
I. Total indirect costs				\$30,934
(For information on the rate used, please refer to the award notice)				
J. Total direct and indirect costs (H+I)				\$75,766
K. Fee				\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1943902

PI Name:

L. Amount of this request (J) or (J+K)

\$75,766

M. Cost sharing

\$0

NATIONAL SCIENCE FOUNDATION

Grant Letter

Award:1943902

PI Name: [REDACTED]

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 2002771

Managing Division Abbreviation: DMS

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project

Amendment Date: 04/30/2020

Amendment Number: 000

Proposal Number: 2002771

Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above as modified by revised budget dated 04/22/2020.

Costs of entertainment, amusement, diversion and social activities, and any costs directly associated with such costs (such as meals, lodging, rentals, transportation and gratuities) are unallowable. When certain meals are an integral and necessary part of a conference or meeting (i.e., working meals where business is transacted), grant funds may be used for such meals. Grant funds may also be used to furnish a reasonable amount of coffee or soft drinks for conference or meeting participants and attendees during coffee breaks. No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

AWARD INFORMATION

Award Number (FAIN): 2002771

Award Instrument: Continuing Grant

Award Date: 04/30/2020

Award Period of Performance: Start Date: 07/01/2020 End Date: 06/30/2025

Project Title: Topology, Geometry and Physics

Managing Division Abbreviation: DMS

Research and Development Award: Yes

Funding Opportunity: PD 18-1267 Topology

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$101,069

Total Intended Award Amount: \$305,324

Total Approved Cost Share or Matching Amount: \$0

Total Amount Obligated to Date: \$101,069

Expenditure Limitation: Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

Fiscal Year	Increment Amount
2021	\$101,768
2022	\$102,487

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Institution: Harvard University

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Lynda Kummelt

Email: lkummelt@nsf.gov

Awarding Official

Name: Aprile N Roberson

Email: aroberso@nsf.gov

Managing Program Officer

Name: Joanna Kania-

Bartoszynska

Email: jkaniaba@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel

Senior Personnel Count	1.00
Senior Personnel Calendar Months	1.50
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$34,000
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	0.00
Post Doctoral Calendar Months	0.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$0
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	2.00
Graduate Students Amount	\$13,780
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$47,780
C. Fringe Benefits	\$8,024
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$55,804
D. Equipment	\$0
E. Travel	
Domestic	\$2,000
International	\$2,000

F. Participant Support Costs	
Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	
Materials Supplies	\$0
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$0
<i>Total Other Direct Costs (G)</i>	\$0
H. Total Direct Costs (A Through G)	\$59,804
I. Indirect Costs*	\$41,265
J. Total Direct and Indirect Costs (H + I)	\$101,069
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$101,069
M. Cost Sharing Proposed Level	\$0

*Indirect Cost Rates

Item Name	Indirect Cost Rate
MTDC	69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 2002771

Managing Division Abbreviation: DMS

Amendment Number: 002

AWARDEE INFORMATION

Award Recipient: PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Awardee Address: 1033 MASSACHUSETTS AVE 5TH FL CAMBRIDGE, MA 02138-5369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: Increment

Amendment Date: 06/27/2022

Amendment Number: 002

Proposal Number: Not Applicable

Amendment Description:

The purpose of this amendment is to add incremental funding to the award in the amount shown below in the Funding Information section.

Except as modified by this amendment, the award conditions remain unchanged.

AWARD INFORMATION

Award Number (FAIN): 2002771

Award Instrument: Continuing Grant

Award Date: 04/30/2020

Award Period of Performance: Start Date: 07/01/2020 End Date: 06/30/2025

Project Title: Topology, Geometry and Physics

Managing Division Abbreviation: DMS

Research and Development Award: Yes

Funding Opportunity: PD 18-1267 Topology

Assistance Listing Number(s) and Name(s): 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$102,487
Total Intended Award Amount: \$305,324
Total Approved Cost Share or Matching Amount: \$0
Total Amount Obligated to Date: \$305,324

PROJECT PERSONNEL

Principal Investigator:

Email:

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Lynda Kummelt

Email: lkummelt@nsf.gov

Awarding Official

Name: Elizabeth Gebremedhin

Email: egebreme@nsf.gov

Managing Program Officer

Name: Joanna Kania-
Bartoszynska

Email: jkaniaba@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 11/12/2020, and NSF Agency Specific Requirements, dated 05/13/2022, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel	
Senior Personnel Count	1.00
Senior Personnel Calendar Months	1.50
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$34,000
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	0.00
Post Doctoral Calendar Months	0.00

Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$0
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	2.00
Graduate Students Amount	\$14,619
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$48,619
C. Fringe Benefits	\$8,024
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$56,643
D. Equipment	\$0
E. Travel	
Domestic	\$2,000
International	\$2,000
F. Participant Support Costs	
Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	
Materials Supplies	\$0

Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$0
<i>Total Other Direct Costs (G)</i>	\$0
H. Total Direct Costs (A Through G)	\$60,643
I. Indirect Costs*	\$41,844
J. Total Direct and Indirect Costs (H + I)	\$102,487
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$102,487
M. Cost Sharing Proposed Level	\$0

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 2005475

Managing Division Abbreviation: DMS

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: New Project

Amendment Date: 07/27/2020

Amendment Number: 000

Proposal Number: 2005475

Amendment Description:

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above as modified by revised budget dated 06/22/2020.

Costs of entertainment, amusement, diversion and social activities, and any costs directly associated with such costs (such as meals, lodging, rentals, transportation and gratuities) are unallowable. When certain meals are an integral and necessary part of a conference or meeting (i.e., working meals where business is transacted), grant funds may be used for such meals. Grant funds may also be used to furnish a reasonable amount of coffee or soft drinks for conference or meeting participants and attendees during coffee breaks. No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

AWARD INFORMATION

Award Number (FAIN): 2005475

Award Instrument: Continuing Grant

Award Date: 07/27/2020

Award Period of Performance: Start Date: 08/01/2020 End Date: 07/31/2023

Project Title: Geometric Langlands Correspondence: Further Directions

Managing Division Abbreviation: DMS

Research and Development Award: Yes

Funding Opportunity: PD 10-1264 Algebra and Number Theory

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$72,096
Total Intended Award Amount: \$210,000
Total Approved Cost Share or Matching Amount: \$0
Total Amount Obligated to Date: \$72,096
Expenditure Limitation: Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

Fiscal Year	Increment Amount
2021	\$68,952
2022	\$68,952

PROJECT PERSONNEL

Principal Investigator:

[REDACTED]

Email:

[REDACTED]

Institution: Harvard University

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)

Name: Lynda Kummelt

Email: lkummelt@nsf.gov

Awarding Official

Name: Aprile N Roberson

Email: aroberso@nsf.gov

Managing Program Officer

Name: James M. Douglass

Email: MDOUGLAS@nsf.gov

GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

BUDGET

A. Senior Personnel

Senior Personnel Count	1.00
Senior Personnel Calendar Months	1.10
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$25,000
B. Other Personnel	
Post Doctoral Scholars	
Post Doctoral Count	0.00
Post Doctoral Calendar Months	0.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$0
Other Professionals	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00
Other Professionals Amount	\$0
Graduate Students	
Graduate Students Count	0.00
Graduate Students Amount	\$0
Undergraduate Students	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
Secretarial - Clerical	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
Other	
Other Count	0.00
Other Amount	\$0
<i>Total Salaries and Wages (A+B)</i>	\$25,000
C. Fringe Benefits	\$5,800
<i>Total Salaries, Wages, Fringe Benefits (A + B + C)</i>	\$30,800
D. Equipment	\$0
E. Travel	
Domestic	\$4,000
International	\$7,860
F. Participant Support Costs	

Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0
Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
G. Other Direct Costs	
Materials Supplies	\$0
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$0
<i>Total Other Direct Costs (G)</i>	\$0
H. Total Direct Costs (A Through G)	\$42,660
I. Indirect Costs*	\$29,436
J. Total Direct and Indirect Costs (H + I)	\$72,096
K. Fees	\$0
L. Total Amount of Request (J) OR (J + K)	\$72,096
M. Cost Sharing Proposed Level	\$0

*Indirect Cost Rates

Item Name	Indirect Cost Rate
MTDC	69.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 2005475

Managing Division
Abbreviation: DMS

Amendment Number: 004

RECIPIENT INFORMATION

Recipient (Legal Business Name): PRESIDENT AND FELLOWS OF HARVARD COLLEGE
Recipient Address: 1033 MASSACHUSETTS AVE STE 3 CAMBRIDGE, MA 02138-5366
Official Recipient Email Address: [REDACTED]
Unique Entity Identifier (UEI): LN53LCFJFL45

AMENDMENT INFORMATION

Amendment Type: No Cost Extensions
Amendment Date: 07/19/2024
Amendment Number: 004
Proposal Number: Not Applicable
Amendment Description:

The purpose of this amendment is to extend the end date from 07/31/2024 to 07/31/2025 in accordance with the NSF Approved No-Cost Extension request submitted on 06/24/2024 without additional funds to allow for the completion of the agreed-to level of effort.

Except as modified by this amendment, the award conditions remain unchanged.

PROJECT PERSONNEL

Principal Investigator: [REDACTED]
[REDACTED]

Email: [REDACTED]

Organization: PRESIDENT
AND FELLOWS OF
HARVARD COLLEGE

NSF CONTACT INFORMATION

Managing Grants Official
(Primary Contact)
Name: Lynda Kummelt
Email: lkummelt@nsf.gov

Awarding Official
Name: Lynda Kummelt
Email: lkummelt@nsf.gov

Managing Program Officer
Name: James M. Douglass
Email: mdouglas@nsf.gov
Phone: (703) 292-2467

Phone: (703) 292-7721

NATIONAL SCIENCE FOUNDATION

Award Notice

Award Number (FAIN): 2012023

Managing Division Abbreviation: PHY

Amendment Number: 000

AWARDEE INFORMATION

Award Recipient: Harvard College, President & Fellows of Harvard University

Awardee Address: 1033 Massachusetts Ave 5th Floor Cambridge, MA 021385369

Official Awardee Email Address: [REDACTED]

Unique Entity Identifier (DUNS ID): 082359691

AMENDMENT INFORMATION

Amendment Type: Renewal

Amendment Date: 08/04/2020

Amendment Number: 000

Proposal Number: 2012023

Amendment Description:

The National Science Foundation hereby awards a Standard Grant for support of the project described in the proposal referenced above .

AWARD INFORMATION

Award Number (FAIN): 2012023

Award Instrument: Standard Grant

Award Date: 08/04/2020

Award Period of Performance: Start Date: 09/01/2020 End Date: 08/31/2025

Project Title: Physics and Applications of Quantum Nanophotonics Systems

Managing Division Abbreviation: PHY

Research and Development Award: Yes

Funding Opportunity: NSF 18-564 Division of Physics: Investigator-Initiated Research Projects

CFDA Number and Name: 47.049 Mathematical and Physical Sciences

FUNDING INFORMATION

Amount Obligated by this Amendment: \$2,076,625

Total Intended Award Amount: \$2,076,625

Total Approved Cost Share or Matching Amount: \$0**Total Amount Obligated to Date:** \$2,076,625**Expenditure Limitation:** Not Applicable**PROJECT PERSONNEL****Principal Investigator:****Email:** [REDACTED]**Institution:** Harvard University**Co-Principal Investigator:****Email:** [REDACTED]**Institution:** Harvard University**NSF CONTACT INFORMATION****Managing Grants Official**
(Primary Contact)**Name:** Pamela V. Conyers**Email:** pconyers@nsf.gov**Awarding Official****Name:** Pamela V. Conyers**Email:** pconyers@nsf.gov**Managing Program Officer****Name:** John D. Gillaspay**Email:** JGILLASP@nsf.gov**GENERAL TERMS AND CONDITIONS**

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

This award is made in accordance with the provisions of NSF Solicitation: NSF 18-564 Division of Physics: Investigator-Initiated Research Projects.

BUDGET

A. Senior Personnel	
Senior Personnel Count	3.00
Senior Personnel Calendar Months	3.00
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	0.00
Senior Personnel Amount	\$90,180
B. Other Personnel	